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ABSTRACT

This theme issue of "Basic Education" considers the importance of studying and comparing student work and educational practice in different countries, in particular as a vehicle to further the professional development of teachers. The first article, "International Studies of Education: Why Should We Care?" (William H. Schmidt; Leland S. Cogan), considers what the practical importance might be of studying educational practices in different countries and concludes that the real value of international studies lies not in the comparisons themselves but rather in the insights gained into U.S. practices and how they might be changed. The second article, "Windows on Thinking: Examining Student Work" (Karen S. Roberts), considers the impact of the Schools Around the World (SAW) online seminars, which provide teachers with structured opportunities to reflect upon student work, noting the power of the process to take participants to a "deeper state of self-reflection" upon their own teaching. The third article, "Schools Around the World" (Johnny Calder), offers a principal's perspective on the participation of fourth-grade teachers in SAW seminars, through which the teachers examined and compared student work and standards in South Carolina with that in other countries, expanding their knowledge of standards and teaching applications and transforming their perspectives on their own instruction and assessment. The last article, "Portugal Perspective on Project SAW" (Sarita Palma Baracho; Maria do Patrocinio Esteves), explores how the author/educators' department's participation in SAW became a vehicle for the professional development of teachers through cooperative elaboration of assessment instruction. (BT)

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Teaching across Borders

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Anne Rogers Poliakoff, Ed.

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Vol. 1, No. 2 Oct. 2001

BASIC EDUCATION

A Monthly Forum For Analysis & Comment

TEACHING ACROSS BORDERS

Professional Development of Teachers

Examining Student Work

Reflective Teaching Practice

CBE
COUNCIL FOR BASIC EDUCATION

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Vol. 46, No. 2, Oct. 2001

BASIC EDUCATION

A Monthly Forum For Analysis & Comment

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EDITOR'S NOTE

"...everywhere, the ceremony of innocence is drowned."
William Butler Yeats, *The Second Coming*

The contributors to this issue of *Basic Education* completed their articles before our world changed forever on September 11. Yet, upon reflection, we find that their texts have not been made obsolete by events.

The theme we had selected for this issue, months ago, is the importance of studying and comparing student work and educational practice in different countries, in particular as a vehicle to further the professional development of our teachers. As Americans attempt to recollect who we are and what we stand for, we may remember that a resounding ambition to make American education (or industry, or sport) the best in the world has long been a feature of our national character. Never will it be more important than in the coming years for American education to advance, and never will we depend more on our ability to forge partnerships across nations in the interest of shared ideals. Never will we again be so innocent as to why these exertions matter.

Our contributors this month include two architects of the TIMSS studies, a school district mathematics specialist, a school principal, and two science teachers from Portugal. William H. Schmidt and Leland S. Cogan of Michigan State University consider what the practical importance might be of studying educational practices in different countries, and conclude that it is not the comparisons themselves, but rather the insights we may gain into our own practices and how they might be changed. Karen S. Roberts, an elementary mathematics specialist, considers the impact of the SAW (Schools Around the World) online seminars, which provide teachers with structured opportunities to reflect upon student work, noting the power of the process to take participants to "a deeper state of self-reflection" upon their own teaching practice. Johnny Calder offers a principal's perspective on the participation of fourth-grade teachers in SAW seminars, through which teachers examine and compare student work

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and standards in South Carolina and in other countries, expanding their knowledge of standards and teaching applications and transforming their perspective on their own instruction and assessment. Sarita Palma Baracho and Maria do Patrocínio Esteves, biology teachers from Portugal, explore how their department's participation in SAW became a vehicle for the professional development of teachers through cooperative elaboration of assessment instruments.

The Schools Around the World program is operated by the Council for Basic Education in conjunction with eight other countries interested in developing deeper understandings of what constitutes higher levels of student achievement in science and mathematics and in what contexts such student work is produced. More information about the programs and student work database can be procured from the website at www.s-a-w.org. The United States portion of this work has been funded by grants from the U.S. Department of Education, The Pew Charitable Trusts, the AT&T Foundation, the John S. and James L. Knight Foundation, the Lucent Technologies Foundation, the GE Fund, the National Science Foundation, the Cafritz Foundation, the NEC Foundation, Lockheed-Martin Corporation, Sylvan Learning Corporation, the Verizon Foundation, and the Coca-Cola Foundation.

SAW participants discuss, analyze, and reflect on student work from their own classrooms and from around the world in a collaborative and supportive environment. From a deepening appreciation for the complexities of assessing student work, teachers move towards a richer, more thoughtful contemplation of themselves as teachers. Reflective teaching means the ability to describe, analyze, explain, and reflect on what you are doing while simultaneously adapting your instruction so that it best matches the needs of the students. Donald Schoen called this "reflection-in-action" and considered it to be a milestone skill for professional practice (Schoen, 1987). Reflection must become a central part of the teaching and learning process.

By using selected student work cases from other countries, SAW also leverages the cognitive dissonance that occurs when teachers examine cases that have significantly different curriculum foundations, instructional assumptions, and student achievement expectations. In *The Teaching Gap*

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(1999), James Stigler and James Hiebert explain that different approaches and techniques in teaching did not become strikingly apparent until they began looking at classrooms outside of the United States: "To put it simply, we were amazed at how much teaching varied across cultures and how little it varied within cultures."

Part of what is so exciting about SAW is that while its focus is international: looking across nations for standards, practices, and assumptions that will enlighten and inspire

SAW has now established a two-year Academy for Teaching Excellence.

teachers—its impact is individual: it changes the professional practice of one teacher at a time—and its impact is cumulative: creating a critical mass of such teachers. If we are to achieve excellence in education, we will need hundreds of such teachers within the profession, who have seen at first hand what happens in other countries, reflected on those practices, and applied this knowledge back in their own classrooms.

Culminating years of experience working internationally with teachers, SAW has now established a two-year Academy for Teaching Excellence that will engage teachers in a critical dialogue on assignments, student work, and assessment, with the explicit purpose of improving the design, implementation, and assessment of their lessons. SAW is working with districts to implement it systemically.

The acrid smoke that took so many lives and continued for so many days to drift upward from the ruins obscured our view of what remained. It offers a bitter metaphor for the difficulty so many of we lucky survivors have had in seeing where we stand, and what step we should take next, as we struggle to be resolute and constructive—and to make our work feel meaningful again. We hope that the commitment of the teachers discussed in these pages to their professional development will help such readers recover their own purpose and direction.

Carol Stoel and Anne Rogers Poliakoff

INTERNATIONAL STUDIES OF EDUCATION: WHY SHOULD WE CARE?

By William H. Schmidt and Leland S. Cogan

Comparative studies of education often seem to evoke a "so what?" or "who cares?" reaction in the United States. Studies of student achievement in different countries may leave one wondering what practical importance such differences hold in the real world or work and commerce. Descriptions that highlight differences in common educational practices may appear intriguing and stimulate curiosity but may leave one wondering what the relevance is to what happens (or should happen) at the school down the street.

The value of such studies is almost assumed to be self-evident, given the sort of attention the media frequently affords them. Reports of rankings, along with comparisons of U.S. scores with countries *x*, *y*, and *z*, reduce the entire endeavor to a sort of education Olympics or horserace. The value, obviously, lies in the comparisons! Who's on first? Who's doing it right?

As intriguing and entertaining as some comparisons may be—"Wow! Teachers in country *x* *never* assign homework!" or "Students in country *z* have to go to school on *Saturday*!"—these are practices that must be understood within their particular social, cultural, and educational contexts. Attempting to copy, or to transplant the practices of one country into another, will not likely have the desired effect: alien grafts rarely take without extensive preparation and effort.

Value of International Comparative Studies

The real value in international studies lies not in the comparisons themselves, but in the insights we may gain into our own common practices. International comparisons hold up and frame what is familiar against the background of a

considerable range of alternatives. This can lead to a thoughtful reconsideration of our rationale for doing things the way we do—or even initiate a thoughtful evaluation of something never before considered.

Many people, for example, are familiar with schools. They know what schools are and what happens in the classrooms inside the schools. Schools are schools, whether they are in urban Detroit or rural Montana. We began our involvement with international education research in the days leading up to TIMSS with a similar assumption about the nature of schools in various countries. We discovered that school has commonalties everywhere: students, teachers, and textbooks.

How these commonalties interact and work within a larger education system, however, can vary considerably. We discovered, for example, that in Norway primary teachers typically stay with the same group of students for the first five to six years of that group's formal school experience. We also learned that in Switzerland, "schools" only exist in large cities. The majority of students and teachers meet together in rooms located in buildings that are not necessarily dedicated to housing educational activities. Furthermore, school administrators and other support personnel are only found in such dedicated facilities, which generally house the upper secondary grades or are located in cities.

Clearly there are a number of ways to conduct school. The examples mentioned here were not selected to suggest that we in the United States should give careful consideration to

The more we can see the way we do things as choices, the better position we are in to consider and construct profitable change or reform.

changing either the nature of our school buildings or the length of time elementary teachers typically work with the same group of students. Some consideration of these issues may be fruitful, but the point to be made here is that these schooling practices represent options—choices that have been made

about how school gets done. The more we can see the way we do things as choices, the better position we are in to consider and construct profitable change or reform.

What We Can Learn From TIMSS

In the Third International Mathematics and Science Study (TIMSS), the focus was not on structural aspects of school such as the previously mentioned examples—although these were a part of the study. The focus, rather, was on the substance of education, the school curriculum, the content at the center of what teachers and students do in schools.

TIMSS led to thought-provoking insights into the U.S. mathematics curriculum.

Previous international studies led us to suspect that the achieved curriculum—what students demonstrate that they know—varies from one country to another. TIMSS assessed this aspect of curriculum in the context of an extensive investigation of the intended curriculum—what systems intend their students to learn, along with the implemented curriculum—what is taught in the classroom. Measurements of these curriculum aspects led to one unmistakable conclusion: the mathematics and science taught and studied in the schools of one country can differ substantially from what exists in the schools of another. In short, there are many ways to do mathematics and science education.

More specifically, this curriculum measurement in TIMSS led to some thought-provoking insights into the U.S. mathematics curriculum. These insights were possible because TIMSS was designed from the start to examine the relationship among the various aspects of the curriculum: the intended, the implemented, and the achieved. For example, the U.S. intends teachers and students in first through eighth grades to study two to three times more topics than the curriculum in other countries. Consistent with this breadth, U.S. textbooks are truly first in the world in their size, weight, and scope. Not too

surprisingly, given these intentions and resources, U.S. teachers tend to spend some time on every intended topic, typically without emphasizing any smaller number of topics, as is common in other countries. All of this contributes to the "mile-wide, inch-deep" nature of the U.S. curriculum.

Thoughtful and principled insights, stimulated by examples from other systems, can lead to powerful revisions in our quest to provide a challenging and equitable education for all our students. One effort to learn from the example of others is the Council for Basic Education's program, Schools Around the World (SAW). SAW gives teachers the opportunity to examine and reflect upon their own teaching practices through a collaborative discussion about expectations, accurate evaluation, and evidence of learning through examining student work. Nations were selected for participation in part because they performed relatively highly in TIMSS.

Insights from TIMSS have led to several other thoughtful efforts to revise U.S. mathematics and science curricula. Achieve, an independent, bipartisan, nonprofit organization formed in 1996 by governors and corporate CEOs, has drawn on the principles gleaned from analyzing curriculum taught in the highest achieving countries. It has brought together mathematicians, mathematics educators, state and district curriculum supervisors, and teachers to formulate a challenging and coherent approach to mathematics education for grades 6-8. The North Central Regional Educational Laboratory (NCREL), in consultation with the U.S. TIMSS

Thoughtful and principled insights, stimulated by examples from other systems, can lead to powerful revision.

National Center at Michigan State University, supports a website where districts can analyze their mathematics and science curricula against the international benchmark data gathered in TIMSS (see http://currmap.ncrel.org/default.htm). This site encourages districts to adopt a system perspective and consider what topics they would want a student to study

at each grade across all the years of the student's schooling. The site also displays examples from other countries providing interested parties with alternatives to some of the curriculum choices that have been made.

The real value stems from obtaining a fresh perspective on the array of choices embedded in our own approach to education.

So what is the value of international study? It is certainly not to obtain bragging rights for the top spot on some list, nor even to identify specific practices that we may want to copy. The real value stems from obtaining a fresh perspective on the array of choices embedded in our own approach to education and to apply this in our ongoing efforts towards excellence and equity for all students.

William H. Schmidt, Ph.D. is University Distinguished Professor and Director of the U.S. TIMSS National Research Center at Michigan State University, and Leland S. Cogan, Ph.D. is a Senior Researcher with the U.S. TIMSS National Research Center at Michigan State University.

WINDOWS ON THINKING: EXAMINING STUDENT WORK

By Karen S. Roberts

As beginning teachers, many of us have puzzled over student responses to our carefully phrased test questions. *What was he thinking? How could she possibly think* ***that's*** *what I meant?* Those were probably our students' questions too! As we gained experience, we realized that the clarity of our questions, as well as the structure of our instruction, affected the accuracy of student responses. Finally, through the use of rubrics and scoring tools, we have helped students learn how to communicate their understanding. As teachers, we have moved along a continuum of thinking about student thinking.

The Schools Around the World (SAW) seminars aim to help teachers through this process by providing a supportive and collaborative study environment. Seminars are self-paced and can be completed on the participants' weekly schedules, rather than requiring participants to be online at a certain time. Each seminar is a series of five sessions. The first two sessions center on work by the students of a teacher in the United States. Sessions three and four focus on work by students in another country. These sessions are supplemented by readings about the purposes of assessment. Participants analyze and reflect upon students' work and, in the final session, reflect upon the entire process.

Online courses like the SAW seminars require the participants to make a commitment to do initial reflective postings based on the material they have studied. In order to get the most benefit from the course, participants need to revisit the discussion and read and reflect on the postings of others. An advantage of this approach over a traditional seminar is that participants have time to consider what someone else has said and frame the most thoughtful answer. Ideally, the online group

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should be large enough to provide a variety of opinions even if there is some attrition in the group.

Looking at the work of other teachers' students is a gentle entry into the reflective process. Reflecting and responding online allows participants to progress in a safe environment that supports risk-taking. Seeing the work of students in other states, and then in other countries, enables participants to look through the window into the classrooms of other teachers, giving added perspective and encouraging analysis through a different filter.

The implications of examining our own thinking about instruction and assessment are profound.

That filter is the second powerful aim of the SAW seminars, and it takes participants to a deeper state of self-reflection. As teachers look at student work, they also begin to look at the work of teachers and to ask: *What was the teacher thinking? What did she intend for the students to do?* Participants examine the clarity of the teacher's lessons, assessment, and rubrics. The more thoroughly the teacher completes the template, the more completely the participants understand the teacher's thinking. A picture of the curriculum and the teacher's instruction unfolds through the teacher's explanations and the student's work. Looking at an anonymous colleague's work is comfortable and allows online conversations to become penetrating.

The end result? Just as we moved along a continuum of thinking about student thinking, we now move along a continuum of thinking about our own thinking. We begin to look at our own planning for instruction and construction of assessments and ask: *What am I thinking? What do I want my students to do to demonstrate their mastery of the subject?*

The implications of examining our own thinking about instruction and assessment are profound. Instructionally, we sometimes realize that we have a misconception about the content we are teaching and need to delve more deeply into

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the subject. Other times we see that we have missed some of the developmental background that students need—what Liping Ma calls the "knowledge package" (*Knowing and Teaching Elementary Mathematics*, Lawrence Erlbaum Associates, 1999). We may also see that our sequence of instruction needs refinement. When we look at assessment, we carefully analyze whether or not we are measuring what we intended and whether our questions are clear. We construct sample answers so we know what we expect, and we communicate our expectations to students.

These are the results that the SAW seminars can foster. While the same kind of examination of student and teacher thinking can be done within a school, the seminars provide help for those in a variety of circumstances. Looking at work collaboratively with colleagues within a school is a process that requires a school culture and trust-building that takes time, and may not occur. A teacher may also be at a different level of readiness for examining student work than her colleagues. The open-ended structure of the seminars allows self-differentiation. If a teacher is new to the process, she can read the interaction of other participants before venturing an opinion. A more experienced participant has the flexibility to explore his or her thinking. Teachers are limited only by their time and interest in how meaningful the seminar can become for them. The SAW experience can also lead a teacher to begin to foster the same type of investigation within her building.

Staff developers can also learn from the seminars how to develop protocols that they can use in their buildings to begin to look at student work. Understanding that teachers are moving along a continuum, staff developers can lead them through the method of looking at anonymous student work, while they are building the culture and trust needed to look at the work of students and teachers within the school.

SAW seminars provide a valuable tool for individuals and schools to begin the important work of examining student and teacher work in order to answer the questions we ask ourselves during instruction and assessment.

Karen S. Roberts is an Elementary Mathematics Specialist in Montgomery County Public Schools, in Maryland.

SCHOOLS AROUND THE WORLD

By Johnny Calder

As the 21st Century begins, public schools face the daunting task of providing meaningful and purposeful education for our students in a transformed world. Educators need to define educational goals that will befit a global economy and ensure that students are prepared for their future roles in that economy. It will be up to educational leaders to determine the measures of success for their schools in these new circumstances.

With this in mind, each educator plays a role in the changes a school must make. However, those in leadership roles will have the greater burden. The educational leader will implement a curriculum intended to enable high standards of learning for all students, which will prepare them for the worldwide economy. It will be up to the leaders in education to provide professional development that is ongoing, meaningful, and of high quality in order to meet the demands for teacher quality. Professional development can help teachers work, not necessarily harder, but together, more efficiently and more productively.

Our vision is to create a world-class school. What is a world-class school? What does a world-class school look like? To achieve world-class status, we feel our teachers need to learn from, share with, and meet the standards of excellent educators from around the world. We believe teachers learn best when they learn together and support one another in planning and reflection.

We were asked by our former State Superintendent of Education to participate in the Council for Basic Education's Schools Around the World (SAW) program. This was an opportunity for our fourth-grade teachers to observe the application of world-class science. The science lessons that are displayed on the SAW worldwide web are showcases of

international educational excellence. They include assessment rubrics as a means to assign universal credit to student work.

As a principal, I am responsible for insuring there are increases in student learning. SAW is a vehicle that we are using to increase learning by encouraging teachers to collaborate with colleagues while analyzing student work. Our teachers plan lessons based, not only on the established South Carolina standards, but also on their increased awareness of science standards from around the world, and the variety of best teaching applications they have discovered. These discoveries lead to large increases in learning, not only for students, but for teachers as well. Collaboration stimulates discussions that are centered on South Carolina standards and student work, which are then compared to the standards and student work of other countries. The process of making comparisons between the work of our students and students from other countries affords teachers the ability to better analyze their own instruction.

Our fourth-grade teachers meet with Schools Around the World facilitators for five all-day sessions each year. The facilitators share copies of international science lesson plans. In turn, our teachers share lesson plans, including rubrics for assessments. The SAW facilitators help guide and focus the participating teachers. Participating teachers ask questions about curriculum standards, the assignment, and whether the student exceeded teacher expectations or did not meet teacher expectations. The facilitator discusses and summarizes concerns that the teachers express about the student's work. This is a powerful way to allow teachers to structure their thinking about classroom instruction.

The SAW facilitators help guide and focus the participating teachers.

Utilizing student work as a means for collaborative discussion, teachers have the opportunity to examine and reflect upon their own teaching practices from both a local and an international perspective. For example, Ms. Flowers found that having a rubric at the beginning of her lessons

strengthened student outcomes and expectations. Mrs. Cary found that having a rubric that was formed with the students, after the lessons were completed, reinforced her curriculum and concepts. Mrs. McCarthy liked the idea of forming a rubric for assessment with her students as the lessons progressed. This way, they could give feedback about the concepts they were learning. Through peer collaboration about expectations, assessments, and methods of instruction, teachers acquire evidence of successful teaching implementation. (All of the teachers were surprised to see the French assignments place so much emphasis on neatness and drawing straight lines.) This year, the teachers are looking forward to viewing more work from overseas.

Our instructors have gained invaluable knowledge about the global science curriculum, their respective teaching styles, and those of their international peers. Lessons designed by our

Mrs. McCarthy liked the idea of forming a rubric for assessment with her students as the lessons progressed.

teachers have been included among the showcase lesson plans on the www.c-b-e.org/saw/sawoverview.htm web site. While reflecting, analyzing, comparing, and contrasting the work of international students, the teacher incorporates principles of international teaching into his or her own instruction. Thus, the teacher strives to improve both teaching and learning in order that our students will meet the challenges of the 21st century.

Johnny Calder is Principal of Forestbrook Elementary School in South Carolina.

PORTUGAL PERSPECTIVE ON PROJECT SAW

By Sarita Palma Baracho and Maria do Patrocínio Esteves

Loures, the most important town in the second biggest *concelho* in Portugal, is situated on the rural outskirts of Lisbon. *Escola Secundária José Afonso*, located in the heart of Loures, offers grades 10 through 12 as well as evening adult education courses.

The biology and geology teachers group have participated in Project SAW since the school year 1998-1999. The group includes eight teachers on the permanent staff with eight to twenty-six years of teaching practice. SAW aims to promote the professional development of teachers through practices built on the cooperative elaboration of assessment instruments, resulting from the application of assessment criteria to student work, as well as through developing competencies in information technology. The teachers felt immediately motivated by these aims, because they met the goals planned by their own department and so could be integrated into planning of assignments and attained together with their curricular aims.

At the beginning of the school year, each department identifies for each subject desired results and assessments,

The teachers felt immediately motivated by these aims.

subsequently approved by the Pedagogical Board. Different forms of assessment (tests, presentations, reports) are discussed, and guidelines are prepared for evaluating group work, homework, oral participation in class, and lab work. Content and performance standards are discussed and

requirements for each teacher's plans, assignments, and assessments are established. This provides the basis for the development of the assessment frameworks for individual or group work by each teacher—or group of teachers, when several classes are involved.

The science department is responsible for coursework in biology, geology, physics, and chemistry, according to the secondary teaching and learning standards. Teaching activities must be planned according to the expected knowledge and

The teachers thought SAW offered a good opportunity to assess and verify their criteria for group work.

competencies that students have to master at the end of secondary schooling (grades 10-12), as well as the knowledge they are supposed to have acquired in the previous years of compulsory schooling (grades 1-9).

During the year, teachers try to diversify the work methodologies, using research methodology in the classroom, not only in demonstrations, but actually doing research, striving to make the students understand factual knowledge, principles, and theories. Besides the regular curriculum, the biology term includes group projects. The biology and geology teachers have always used group work, but the teachers thought SAW offered a good opportunity to assess and verify their criteria for group work planning and evaluation on a more solid basis. Teachers present the project, its goals, subject matter, requirements, and timing to the students. Each group has to present a proposal for the project, describing what they are going to do and how. The project is developed outside the classroom; students rely on teachers to help them whenever necessary.

In school year 1998-1999, the project was carried out by five eleventh-grade and three tenth-grade science classes. Groups of students built three-dimensional models, choosing their materials freely but all working on the same curricular unit—Genetic Information and Transfer: Building the DNA Model. In

year 1999-2000 the same number of classes were involved, but students were free to choose the theme for their project from among all the syllabus topics, including units not previously taught: solar system models, earthquake waves, types of volcanoes, eukaryotic and prokaryotic cells, and plasma membrane. At the end of each school year, projects were exhibited to the school community, and samples of this work included in the SAW international database.

The department defined the methodology for its participation in SAW, and designed its planning and assessment criteria with the support of SAW's Portuguese representatives. Teachers designed the assessment model, and then presented it to the students. Workshops to define the methodology and assessment provided good opportunities for debate. The exchange of ideas allowed the biology teachers to understand the reactions of students more deeply, to reflect upon their difficulties with the tasks assigned, to discuss solutions, and to improve the teacher-student relationship. This type of work led the group of teachers involved in the SAW project to apply other forms of assessment, creating more objectivity in their assessment of group work, which is traditionally done in a more subjective and empirical way.

As a result of the practice gained in the first year there was a slight change in the work methodology. The first year, the

Teachers designed the assessment model, and then presented it to the students.

assessment model was only made known to the students when the teachers gave them back their marked assignments; in the second year, the model was presented simultaneously with the suggested tasks. The new strategy enabled the teachers to verify that assignments were well-structured and the choice of materials fitting both in terms of science and presentation.

In 2000-2001, the Science Department decided to explore why the students had attained much lower final results on the national exam than anticipated. Possible explanations considered were: whether the school's tests were marked with

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more tolerance than the national exams, whether there was excessive pressure during the exam, and the fact that assessments during the year included requirements beyond subject knowledge.

To weigh each teacher's degree of tolerance in test marking, the group decided to standardize the criteria by comparing test corrections. The tests were from two twelfth-grade biology classes. After marking the tests, each teacher chose three good, three average, and three weak tests to be corrected by the other teachers, without disclosing their assessments. Later, a comparison was made, and the criteria were discussed. After an analysis, the teachers concluded that the differences in grading were significant among the tests identified as "good," apparently because teachers differed in their tolerance for inaccuracy in scientific language. Although tests given during the year have scoring rubrics similar to those applied in the national exam, the department decided not to apply the exam rubrics strictly but to define criteria of its own as well.

Students are more motivated when they realize that their tasks are objectively assessed.

Being part of Project SAW these three years has enabled the science department not only to improve their assessment procedures for group work, but also to confirm that students are more motivated when they realize that their tasks are objectively assessed, especially students working on projects based on knowledge not taught in the classroom. Teachers were aware that the quality of assessments and the use of the same assessments by all biology teachers created confidence among students and fostered their commitment to learning. Consequently, the department has decided:

- To keep on defining and following common assessment criteria;
- To standardize the assessment tools;
- To standardize the level of knowledge and skills to be demanded from the students; and
- To keep a strict and demanding assessment process.

Finally, exploring the Project SAW Internet page has proved difficult, due to technical problems and limited access time. Since we intend to continue our engagement in SAW, one of next year's goals is to work systematically on the SAW site. We believe that our small contribution to the SAW project will join the other contributions, and that soon we will have a community of biology teachers fostering the quality of teaching and learning all over the world and, consequently, improving the quality of life on the Earth.

Sarita Palma Baracho and Maria do Patrocínio Esteves are biology teachers at Escola Secundária José Afonso, Loures, Portugal.

DID YOU KNOW?

By Anne Rogers Poliakoff and M. René Islas

Brookings Institution Report Looks at High School Culture
Foreign exchange students, asked to compare aspects of the U.S. high school experience with their home countries, see many differences, according to the Brown Center Report on American Education 2001, released in September. They find American classes easier (56 percent much easier, 29 percent a little easier). They think American students spend less time on homework (34 percent much less, 22 percent a little less). They think American students care more about sports (67 percent much more, 17.8 percent a little more). At home, 73 percent of exchange students do not have jobs. See www.brook.edu/gs/brown/brown_hp.htm.

Number of U.S. After-School Programs Doubles in 1990s
According to a survey released in September by the National Association of Elementary School Principals, 67 percent of elementary school principals report that their schools now offer optional programs for children after regular school hours. Six in ten report that the programs began in the past five years. Almost all the programs offer students help with homework, and most also provide literacy and reading enrichment (85 percent), math enrichment (85 percent), science (69 percent), the arts (63 percent), and computers and technology (62 percent). Almost two-thirds of the principals say they are greatly involved in the program, and 37 percent direct the program themselves. To view the report, visit www.naesp.org/afterschool/report.pdf.

OECD Programme for International Student Assessment
Developed by OECD member countries, PISA aims to assess the extent to which students nearing the end of compulsory education have acquired the knowledge and skills essential for full participation in society. PISA assessments will address three major domains: the results of reading literacy will be available in December 2001, mathematical literacy in 2003, scientific literacy in 2006. Visit http://www.pisa.oecd.org/.

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